

A review of Grizzly Bear Recurring Use Areas Associated with the Selkirk and Cabinet-Yaak Ecosystems

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In recent years, there has been an upsurge in credible grizzly bear sightings and known use by radio-collared research bears in some areas located outside of existing recovery zone boundaries. The 1993 Recovery Plan recognized that grizzly bears could occur outside the recovery zone lines and that the mere presence of bears outside of the boundary was not sufficient reason to change the recovery zones (USDI Fish and Wildlife Service 1993). While observation data is limited and these habitats have not been evaluated to determine if they are of significant biological value, it is recognized that on-going and future land management activities in these areas could result in adverse effects (e.g. incidental take)¹ of grizzly bears.

By 2002, agency biologists acknowledged that grizzly bears were occurring in areas outside of established grizzly bear recovery zones and warranted some level of management consideration. Consequently, interagency teams of biologists were convened to describe the extent of these use areas for the Greater Yellowstone (GYE), Northern Continental Divide (NCDE), Selkirk and Cabinet-Yaak (SCYE) ecosystems (Wittinger 2002)². These areas were called Bears Outside Recovery Zones (BORZ) for the SCYE and they were subsequently incorporated into the amendments to the Kootenai (KNF), Idaho Panhandle (IPNF), and Lolo (LNF) National Forest Plans in 2004 (USDA Forest Service 2004)³.

The nature and amount of motorized access in these areas was quantified in order to discuss the potential impacts to grizzly bears in the amendment to the Forest Plans. Based on direction provided by Wittinger (2003), existing motorized use in these recurring use areas was defined using open and total road densities (miles of road/size of area in square miles). Road density (total length of road (miles)/total area (acre)) was selected for its ease in calculation and utility in monitoring changes in motorized access over time⁴. Subsequent consultation and the resulting biological opinion resulted in a term and condition of “no net increase” in the amount of open road and total road density (miles/square mile) in these areas (USDI Fish and Wildlife Service 2004).

The biologists involved in the 2002-2003 BORZ analysis recognized that the mapping may need to be revisited and updated periodically. Consequently, an interagency team of biologists revisited the BORZ

¹ ESA requires that “incidental take” (takings resulting from, but not the purpose of, otherwise lawful activity conducted by the Federal agency or applicant) be considered for each threatened or endangered individual animal, regardless of whether the animal is needed for recovery or not. The Endangered Species Act (ESA Section 9-B) prohibits take of a listed species, however Section 7(o)(2) permits take if any taking is in compliance with a written statement provided under subsection 7(b)(4)(iv). The agency must show the likely impact resulting from such take and the steps to take that will minimize such impacts.

² Biologists reviewed all grizzly bear monitoring data including radio relocation records, credible observations, and nuisance grizzly bear activity information with direction to consider sightings during the last 5-10 years, i.e. 1993-2002, in their delineation of recurring use areas (Wittinger 2002). In the SCYE, boundaries were chosen based on the ease of identification and were not denoted based on a desired size (in area) or buffer around individual grizzly bear locations.

³ This decision was successfully overturned in 2006 which necessitated the development of a supplemental environmental impact statement (DEIS). The 2009 Draft SEIS used the 2002 BORZ delineations (USDA Forest Service 2009).

⁴ Research in the 1980s and 1990s focused on the distance from roads that grizzly bears avoided (e.g. Schallengerger and Jonkel (1980) and Kasworm (1985)) or GIS derived road density classes (e.g. Mace and Mandley (1993) and Wakkinen and Kasworm (1997)) rather than using simple road density (total length of road (miles)/total area (sq.mile)) in a research area to quantify bear movements and habitat use.

for the SCYE to refine the maps of occupied grizzly bear habitat as part of renewed effort to amend the KNF, IPNF, and LNF forest plans in 2009-2010. This new effort focused on examining credible sightings of grizzly bears since 1994, as observations and known habitat use outside recovery zone boundaries prior to that date were taken into consideration in revising recovery zone boundaries with finalization of the revised 1993 Recovery Plan (USDI Fish and Wildlife Service 1993)⁵. Furthermore, the team developed a process to consistently identify these areas based on the number and type of observations⁶ and the use of an objective mapping unit boundary to help define these areas. Specifically, delineation was generally based on three or more credible observations⁷ within the last 16 years (1994-2009) in individual 6th order watershed Hydrologic Unit Codes (HUCs)⁸ (Appendix A). Sixth order HUCs were selected because of their size (typically 10,000-to 40,000 acres)⁹ and their common use as cumulative effects boundaries for watershed, fisheries, and wildlife analyses in environmental documents by the Forest Service¹⁰. Adjacent HUCs with enough grizzly bear use to be considered recurring use areas were combined to create contiguous areas of recurring use. The size and juxtaposition of individual BORZ were not developed to emulate Bear Management Units (BMUs) in the recovery zone¹¹. The methodology allowed for future expansion in the overall size of the BORZ if adjacent 6th order HUCs experienced repeated visitation by grizzly bears (ibid).

The following information and assessment from the 2009 interagency effort supersedes the original 2002 BORZ delineation (Wittinger 2002) and the Johnson (2003) analysis in regards to access management for grizzly bears that occur outside the recovery zones on the IPNF, KNF, and LNF.

BORZ Areas and Size: A total of seven BORZ areas were identified using this process. This includes five BORZ adjacent to the Cabinet-Yaak recovery zone and two BORZ adjacent to the Selkirk recovery zone (Figures 1 and 2). The IPNF administers the majority of land included in the Priest Lake, Pack River, and Mission-Moyie BORZ (formerly called Deer Ridge in the 2002 effort), while the KNF administers the majority of land included in the Cabinet Face, Clark Fork, West Kootenai, and Tobacco BORZs. No BORZ areas were identified adjacent to the Lolo National Forest boundary. The BORZ areas are highly variable in size, ranging from less than 53 square miles (Pack River) to nearly 449 square miles (Tobacco). Additionally, the boundaries of these areas are not static, but may be adjusted as grizzly bear use patterns are reevaluated in future years.

⁵ The Selkirk recovery zone was expanded to incorporate the Kalispell-Granite and Lakeshore BMUs with completion of the 1993 recovery plan (Servheen et al. 1991, U.S. Forest Service 1995). This was based on radio-telemetry data showing use of these areas by a female grizzly bear and her cubs in the 1980s and early 1990s. This was the only instance where the U.S. Fish and Wildlife Service chose to alter the existing recovery zone boundary based on known grizzly bear sightings and habitat use (up through 1993) outside the existing boundary in either the Selkirk or Cabinet-Yaak ecosystems.

⁶ BORZ were identified using all grizzly bear data, regardless of the population source of individual bears (i.e. Selkirk ecosystem (SE), Cabinet-Yaak ecosystem (CYE) or Northern Continental Divide ecosystems (NCDE). Specific to the Kootenai NF, grizzly bears observed east of Lake Koocanousca in the Tobacco BORZ are part of the NCDE population.

⁷ Observations of females with cubs were weighted more heavily.

⁸ A nationwide system of delineating watersheds based on surface hydrologic features. The designation is completed by the U.S. Geological Survey.

⁹ The 6th Order HUC was considered large enough to incorporate some level of daily movements by the grizzly bear(s) that were observed in the area, but not so large as to obscure the potential importance of the immediate area surrounding the location.

¹⁰ The 2002 effort resulted in BORZ boundaries that were hand-drawn onto forest maps with no consistent approach to buffering distance from known sightings. Therefore, having a consistent and objective mapping criteria was important in the 2009 review of the BORZ because the available data does not allow for a more informed decision to be made concerning the overall use of these areas (i.e. few observations, little-to-no movement information, lack of habitat availability and use data).

¹¹ The Selkirk and Cabinet-Yaak BMUs are based on the home range size of a female grizzly bear (i.e. approximately 100 square miles) and were developed to incorporate all seasonal habitats.

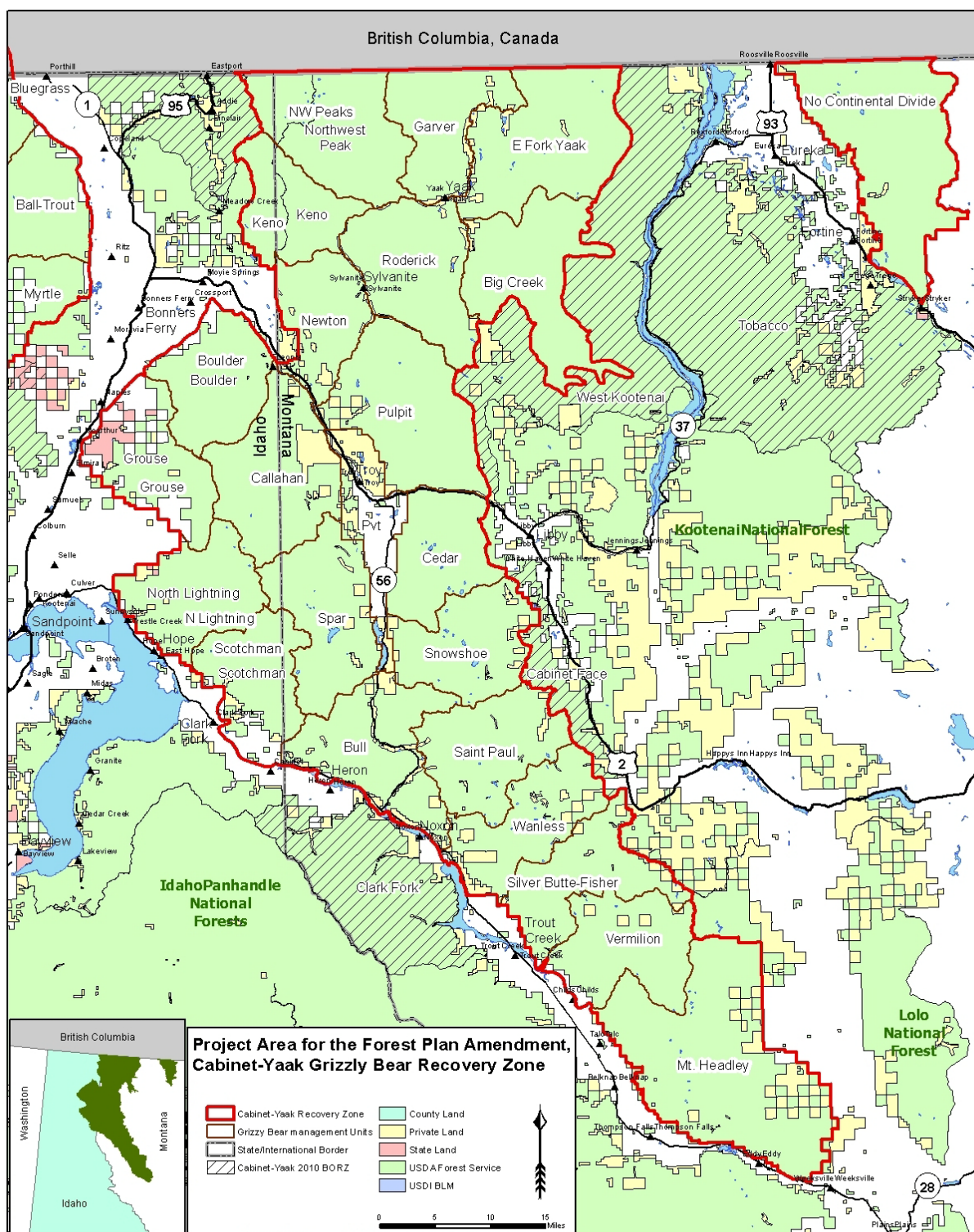


Figure 1. Cabinet-Yaak Grizzly bear recovery zone and associated Bears Outside Recovery Zone (BORZ) areas.

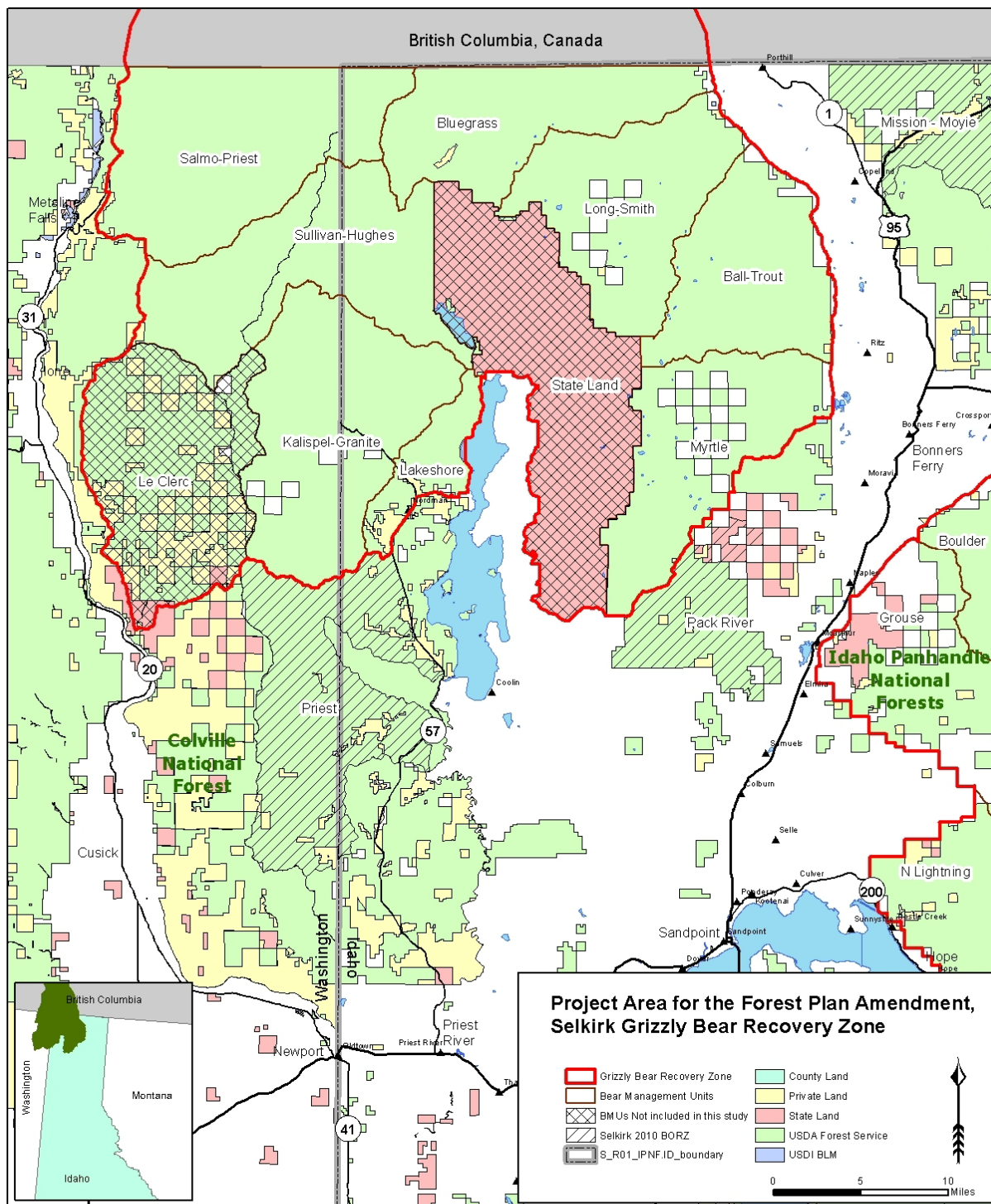


Figure 2. Selkirk Grizzly bear recovery zone and associated Bears Outside Recovery Zone (BORZ) areas

BORZ and Credible Bear Sightings: Table 1 displays a summary of the number of credible sightings of grizzly bears documented for the last 16 years (1994-2009) within the seven BORZ (Appendix A)¹². These sightings do not necessarily represent unique individuals, and in many cases, a single animal is responsible for a number of sightings that occurred across the BORZ area in a given year. However, the information in Table 1 does provide a relative index of the amount of use these areas have received over time and illustrates those BORZ with known use by females with cubs. Available radio telemetry data demonstrates that some bears incorporate portions of these areas within their seasonal home range; however, there is no indication of exclusive use of any BORZ from that data source. In addition, grizzly bear telemetry monitoring data indicates that grizzly bears frequenting the eastern portion of the Tobacco BORZ are tied to the Northern Continental Divide Ecosystem (NCDE) Recovery Zone.

The presence of grizzly bears in these areas indicates that some bears have apparently acclimated to the conditions within them and, at least in the short term, seem able to find and secure the resources necessary for their needs and avoid human encounters resulting in mortality (USDI Fish and Wildlife Service 2011). It is not possible to estimate of the number of animals that may be using these areas from the available data.

Table 1. Summary of bear sightings in the seven BORZ areas situated outside the Selkirk and Cabinet-Yaak Recovery Zones, 1994-2009 (data derived from Appendix B). See footnote 12 for exceptions in years of data used for the Cabinet Face BORZ.

Bears Outside Recovery Zone	Grizzly Bear Recovery Zone	National Forest	Total Size (Acres)	Number of Credible Sightings 1994-2009		
				Total	Females with Cubs	Bear Mortality
Priest	Selkirk	IPNF	80,733	17	0	1
Pack River	Selkirk	IPNF	33,869	23 ^a	4 ^a	0
Mission-Moyie ¹	Cabinet-Yaak	IPNF	71,545	28	2	0
Clark Fork	Cabinet-Yaak	KNF	101,899	16 ^a	3	0
Cabinet Face	Cabinet-Yaak	KNF	28,052	23 ^{2a}	1	1
West Kootenai	Cabinet-Yaak	KNF	173,122	62 ^a	10	3
Tobacco	Cabinet-Yaak	KNF	287,240	60 ^a	17	0

¹Formerly called 'Deer Ridge' (Wittinger 2002).

²Includes observations of two different female grizzly bears in 2010.

^aThese data differ from the total number of credible sightings portrayed in Table 22 of the Biological Assessment (USDA Forest Service 2010) due to an counting error in the 2010 document.

BORZ and Bear Mortality: There has been one human-caused bear death on National Forest System lands within the identified grizzly bear recurring use area after they were originally mapped by Wittinger et al. (2002). This occurred in the fall of 2002 when a subadult male grizzly bear was killed in Lamb Creek in the SRZ-associated Priest BORZ. Two other grizzlies were killed on non-FS lands within the CYRZ-associated West Kootenai BORZ in 2003 and 2004. Also, two grizzlies from the Cabinet-Yaak ecosystem

¹² The interagency review and re-delineation of the BORZ occurred in 2009 and was finalized in March of 2010. Therefore, the re-delineation was based on credible observations from 1994 to 2009. However, an exception was made for the Cabinet Face BORZ in the CYE after a review of 2010 telemetry data indicated recent use of an area just outside the BORZ (West Fisher River HUC) that had been frequented by two radio-collared female grizzly bears (Allen and Kasworm pers. comm. 2010). This was the only case where 2010 observation data was incorporated into the datasets included in Appendix B, as there were no other instances where there were sufficient numbers of 2010 observations which would have altered the boundaries of the seven BORZ as finalized in March of 2010.

were killed in 1996 and 1997 prior to the creation of BORZ in 2002. Table 2 provides a history of human-caused mortality in the seven areas that are now mapped as BORZ from 1994 - 2009.

Table 2. Summary of human-caused mortality in the seven areas that have been recognized as supporting recurring grizzly bear use, i.e. BORZ, 1984-2009 (Wakkinen and Allen pers. comm. 2010, Kasworm and Allen pers. comm. 2010).

Recovery Zone	Bears Outside of Recovery Zones - BORZ	National Forest System Lands	Private, State, and Railroad Lands
Selkirk	Priest	2002-Male	None
	Pack River	None	None
Cabinet-Yaak	Mission - Moyie	1984-Male	None
	West Kootenai	1990-Male 1996-Male	2004-Female 2005-Female
	Cabinet Face	None	1997-Male
	Tobacco	None	None in BORZ
	Clark Fork	None	2001-Female 2008-Female 2008-Female

BORZ and Motorized Access Management: Table 3 displays the size, land ownership, and linear miles of open and total roads for the BORZ areas as of 2009. These areas are characterized by having a high percentage of miles of open road (51 to 100 percent on NFS lands) in relation to the total miles of road.

Table 3. Existing motorized access conditions for Bears Outside of Recovery Zone (BORZ) situated on the Idaho Panhandle (IPNF) and Kootenai National Forests (KNF), 2009.

Bears Outside Recovery Zone	Grizzly Bear Recovery Zone	National Forest	Total Size (Acres)	National Forest Lands			Private and State Lands		
				Total Area (Acres)	Total Roads (Miles)	Open Roads (Miles)	Total Area (Acres)	Total Roads (Miles)	Open Roads (Miles)
Priest	Selkirk	IPNF	80,733	75,793	316.4	314.4	4,940	36.1	33.6
Pack River	Selkirk	IPNF	33,869	28,097	41.9	37.9	5,772	6.9	6.9
Mission-Moyie ¹	Cabinet-Yaak	IPNF	71,545	58,472	200.3	167.3	13,073	112.8	105.7
Clark Fork	Cabinet-Yaak	KNF	101,899	100,421	256.1	176.9	1,478	13.0	10.4
Cabinet Face	Cabinet-Yaak	KNF	28,052	27,093	164.1	128.0	963	6.9	6.9
West Kootenai	Cabinet-Yaak	KNF	173,122	169,705	615.3	315.9	3,417	30.3	16.0
Tobacco	Cabinet-Yaak	KNF	287,240	266,947	1,123.9	867.0	20,291	179.8	168.0

¹Formerly called 'Deer Ridge' (Wittinger 2002).

Linear miles of road were used to quantify the amount of access in this new assessment of BORZ because they are more easily communicated and monitored than road densities. The proposed action includes the following standards to conserve grizzly bear habitat in the BORZ:

- No permanent increases in the total linear miles of “open roads” and “total roads” on National Forest System lands in any individual BORZ area above baseline conditions, except in cases where the Forests lacks discretion to prevent road building across national forest lands due to legal or other obligations (e.g. ANILCA access claims, identification of RS2477 thoroughfares).
- Potential increases in linear miles of open or total roads must be compensated for with in-kind reductions concurrently or prior to such increases.
- Provisions will be made for temporary increases in linear miles of open road to allow for public motorized use of roads associated with recent land management activities. Public use must occur from June 16 to August 31 of the same year that mechanized harvest and/or post-harvest slash activities occurred (i.e. the same bear year).
- Future timber sales will be scheduled to avoid concurrent disturbance in multiple adjacent watersheds.

Within Recovery Zone boundaries, proposed access management standards for grizzly bear habitat within recovery zone boundaries include thresholds for Open Motorized Route Density (OMRD), Total Motorized Route Density (TMRD), and Core area. OMRD and TMRD are based on research using a Geographic Information System (GIS) “moving window” analysis technique, while core area is derived using a buffering routine to define secure habitat that is more than 500 meters from a usable motorized route (IGBC 1998, Mace and Manley 1993, Wakkinen and Kasworm 1997). Research indicates that increasing densities of both open and restricted roads have negative effects upon grizzly bear behavior and habitat use. However, these standards are not appropriate for describing the existing baseline in the BORZ or the effects of motorized access on grizzly bears in these areas for a number of reasons, including:

- The value of these areas to grizzly bears is currently unknown as no assessment of seasonal habitat availability has been completed at this time. They were not included when the respective recovery zones were first delineated following federal listing, nor were they considered when the Lakeshore and Kalispell-Granite BMUs were added to the Selkirk recovery zone in 1993. If and when these areas are deemed essential for the recovery of the species, they would be formally appended to the Recovery Zones through U.S. Fish and Wildlife Service action. If that were to happen, then the use of OMRD, TMRD and Core parameters may be appropriate.
- Bears using these areas apparently tolerate substantially greater levels of human disturbance (highways, residences, heavy industrial use and highly roaded areas) than those in BMUs (USDI Fish and Wildlife Service 2011). Research on the use of BORZ should focus on the demographics of bears frequenting these areas (e.g numbers, sex and age; survival and reproductive rates; home range size and habitat use) as well as the conditions within their individual home ranges rather than just the motorized access-related conditions of the areas.
- BMU sizes are in most cases biologically based (approximately the size of an adult female home range), facilitating comparison between BMUs. Conversely, the BORZ areas are highly variable in size, ranging from less than 53 square miles (Pack River) to nearly 449 square miles (Tobacco). Additionally, the boundaries of these areas are not static, but may be adjusted as grizzly bear use patterns are reevaluated in future years. There is limited basis of comparison between units of substantially different acreages, or within units that vary in size and shape over time.

- While external BORZ boundaries were drawn to intentionally exclude non-federal ownerships whenever possible, some BORZ areas (as currently delineated) contain substantial private or other inholdings. Even if these in holdings are removed after the moving windows analysis is complete, road densities are still potentially influenced by the presence of roads up to 900 meters outside the actual analysis area. This is a greater issue for BORZ areas than BMUs because the former can be surrounded by private lands (rather than merely having this situation present along one boundary), and additional road building on surrounding lands or inholdings can influence road densities even if the areas themselves are not included in the final percentages. Consequently, the current direction of no net increase of linear road miles is applied to **NFS lands only** within BORZ boundaries.

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Appendix A. Guidelines and data used to delineate the recurring grizzly bear use areas known as Bears Outside of Recovery Zones (BORZ)

- **Delineation**
 - 6th order Hydrologic Unit Codes (HUCs) located around Recovery Zone boundaries used to objectively delineate a boundary around a given set of bear observation data
 - HUCs in one general area aggregated to create a 'Bears Outside of Recovery Zone' (BORZ).
- **Grizzly Bear Data used for Classification**
 - determination based on evidence of multiple individuals with females + cubs given high priority
 - multiple years of use (typically at least 3 observations since 1994¹³)
 - radio collar documentation being given a high priority
 - additional information such as credible sightings, captures, and mortality sites also taken into consideration
- **Additional Considerations in Selecting HUCs for inclusion into BORZ**
 - Proximity to the Recovery Area boundary
 - Recurring use in adjacent HUC's
 - Suitable habitats
 - Importance of identified and potential linkages zones
- **Potential Exceptions to Inclusion of Entire 6th Order HUC**
 - Areas that include high concentrations of private lands or recreational residences on FS lands where it has been determined that grizzly bear use should be discouraged¹⁴
 - HUCs that are split by major highways that include little/no observational data or habitat on one side of the highway
- **Maximum BORZ Boundaries**
 - SRZ
 - Canadian border on the north and the IPNF boundary on the west
 - 6th order HUCs that lie between the SRZ and the CYRZ in the Kootenai River valley could be considered for inclusion into the process
 - Southern boundary will include consideration of FS lands north of Pend Oreille Lake and Pend Oreille River and the Clark Fork River¹⁵
 - CYRZ
 - Canadian border on the North, to the KNF border on the east (excluding NCDE), and to the Idaho/Montana state line on the southwest
 - Consider the entire KNF because of the merging of CYRZ and NCDE
 - Southern boundary will extend no further than the Clark Fork River on the IPNF portion of the CYRZ

¹³ All known observations were incorporated into the database included sightings from the 1970s. Sightings of bears outside of the recovery zones started to become more frequent in the 1990s.

¹⁴ Similar to Management Situation 3 lands within the Recovery Zone boundaries (USDI Fish and Wildlife Service 1993 Recovery Plan).

¹⁵ It is possible that non-FS lands within 10 miles of the Recovery Zone boundaries could also be identified as BORZ using this process. This information is useful to the US Fish and Wildlife Service in their efforts to manage for grizzly bear recovery into the future. However, only grizzly bear use that is occurring on FS lands outside of the recovery area boundary is being taken into consideration with the forest plan amendments on the IPNFs and KNF.

CABINET-YAAK Recovery Zone

Datasets Considered

- Forest Service IPNF sightings
- U.S. Fish and Wildlife Service (USFWS) sightings (category 4¹⁶ and 5¹⁷) for the last 49 years (1960-2010)¹⁸.
- USFWS radio collared, VHF, and GPS data
- Montana Fish, Wildlife and Parks data for NCDE (radio telemetry and sightings)

Occupied 6th order HUCs (BORZ) surrounding the Cabinet-Yaak Grizzly Bear Recovery Zone (KNF). Updated version 12/10/2010¹⁹.

General Location in Relation to Recovery Zone	6 th Order HUC		Documented Grizzly Bear Use Details	Meets Selection Criteria to be Considered Occupied? Yes or No	BORZ
	Name	Number			
Area west of Lake Koocanusa and north of north of Highway 2	Sink Creek	170101010402	1993, 2003, 2004 sightings & tracks; 2003 two males & 1 female captures	Yes	West Kootenai
	Young Creek	170101010403	1996 sightings; 1998 sighting; 1998 female w/cubs; 2002 female w/cubs; 2003 female w/cubs	Yes	
	Dodge Creek	170101010405	1991 radio collared adult male; 1996 male mortality; 2005 radio collared adult male; 2005 sighting adult male; 2005 radio collared sub-adult male	Yes	
	Sullivan Creek	170101010406	1990 sightings (2); 1990 radio collared sub-adult male; 2001 sighting; 2005 radio collared adult male; 2006 radio collared sub-adult male	Yes	
	Lake Koocanusa -Poverty Creek	170101010409	1990 radio collared sub-adult male mortality; 1994 tracks; 2005 radio collared sub-adult male; 2005 sighting—all sightings west of lake boundary. Cut HUC on east side of reservoir into North and South portions on Black lake road 7283 from reservoir east to Rd 758 then north to Eureka. North of this road is not included; south of this road is included	Yes	
	Upper South Fork Big Creek	170101010501	1994 sighting; 1998 radio collared adult male; 2004 radio collared adult male	Yes	
	Lower South Fork Big Creek	170101010502	1971 female w/cubs; 1981 sighting; 1997 sighting; 1998 sighting; 2003 sighting; 2003 radio collared sub-adult male	Yes	
	Big Creek	170101010503	1971 sighting of female w/cubs; 1988 adult male; 1990 radio collared sub-adult male; 2003 sub-radio collared sub-adult male; 2005 radio collared adult male; 2005 radio collared sub-adult male;	Yes	
	Boulder Creek	170101010601	1993 sighting; 2001 sighting; 2005 sighting; 2005 radio collared adult male; 2006 female w/cub; 2006 two additional sightings	Yes	
	Lake Koocanusa - Gold Creek	170101010604	1990 radio collared adult male; female w/cub 2001; 2003 sub-adult male; 2005 sub-adult male	Yes	
	Parsnip Creek	170101010605	2003 and 2004 radio collared sub-adult male (augmentation bear); 2004 sighting	Yes	
	Lake Koocanusa - Geibler Creek	170101010607	1993 sighting (on east side of lake); sighting 2003; 2004 radio collared sub-adult male; 2004 radio-collared adult male	Yes	

¹⁶ Credible sighting where the researcher talked with the observer and had a relatively high level of confidence that it was a grizzly bear

¹⁷ Documented sighting (e.g. trapping location, observation, photograph, video, or track—most often by USFWS, USFS, or MTFWP biologists)

¹⁸ U.S. Fish and Wildlife Service data reviewed on site courtesy of W. Kasworm. Data is not on file with the Kootenai or Idaho Panhandle NFs.

¹⁹ Review of the 2010 radio-collared information for the Cabinet-Yaak ecosystem indicated that there were enough recent observations in the West Fisher River HUC (Cabinet Face BORZ) to add the NFS lands from this area into the overall BORZ. This includes observations of two different female bears in conjunction with the 2006 sighting of a male bear along the border of this HUC. This combination of observations constitutes sufficient evidence of recurring use. (Allen and Kasworm pers. comm. 2010)

General Location in Relation to Recovery Zone	6 th Order HUC		Documented Grizzly Bear Use Details	Meets Selection Criteria to be Considered Occupied? Yes or No	BORZ
	Name	Number			
Area west of Lake Kootenai and north of Highway 2	Upper Seventeen mile Creek	170101030303	Most of this HUC is in the RZ; 1 radio-collared male in HUC outside of RZ; HUC surrounded by other HUCs that have recurring use	Yes	
	Bristow Creek	170101010702	1991 radio collared adult male; 1998 sighting; 2003 radio collared sub-adult male.	Yes	
	Barron Creek	170101010704	2004 radio-collared sub-adult male	No	NA
	Jackson Creek	170101010706	2003 radio collared sub-adult male	No	NA
	Lake Kootenai - Little Jackson Creek	170101010708	1987 & 1989 sightings of males	No	NA
	Rainy Creek	170101010710	2003 sighting	No	NA
	Upper Kootenai River	170101010711	1986 sighting; 1989 sighting	No	NA
	East Fork Pipe Creek	170101010901	Adult female w cubs 1997, 1998, 2000; female w/cubs 2004; female w/cubs 2007	Yes	West Kootenai
	Upper Pipe Creek	170101010902	1997 sighting; 1998 adult male; 1999 adult male; 2003 sub-adult male; 2004 sighting; 2004 sub-adult male; 2005 mortality of a female; 2005 capture of nuisance bear (sub-adult male)	Yes	
	Lower Pipe Creek	170101010903	1990 sighting; 1996 sighting	No	NA
	Bobtail Creek	170101011003	2004 Sighting	No	NA
General area located west of Lake Kootenai	Swamp Creek-Lake Creek	170101010201	1995 female w/cubs; 2004-'05 radio collared adult female; 2003 female w/cubs; 2007 female w/cubs	Yes	Tobacco
	Upper Fortine Creek	170101010202	1997 sighting; 2004 collared female w' cub; 2006 sighting; 2007 sighting.	Yes	
	Sunday Creek	170102100102	1995 sighting; 2001 large tracks near Louis lake; 2004 collared adult female – lactating when caught; 2003 adult female w/cubs on periphery; 2009 tracks in meadow & Harvey creek; reports of tracks during hunting season every year (FWP)	Yes	
	Edna Creek	170101010203	2003-04 radio collared female; 2003 female w/cubs; 2003, 2004, 2005, 2007 sightings	Yes	
	Middle Fortine Creek	170101010204	2003 radio collared adult female; 2003 female w/cubs; 2004 female w/cubs; 2005 sighting; 2006 sighting	Yes	
	Deep Creek	170101010205	HUC is all PVT land outside of recovery area.	No	NA
	Meadow Creek	170101010206	1992 sighting; 2003,2004,2005 radio collared female w/young	Yes	Tobacco
	Lower Fortine Creek	170101010207	1995 female w/cubs; 2004 radio collared female w/cub; 2006 female w/cubs	Yes	
	Therriault Creek	170101010303	One third of HUC in RZ; FS has small in-holdings surrounded by PVT	No	NA
	Sinclair Creek	170101010304	One-half of HUC is in RZ; half in PVT, except for small FS in-holdings	No	NA
	Lower Grave Creek	170101010302	Two-thirds of HUC in Recovery; only 5% of rest in FS in-holdings.	No	NA
	Upper	170102100103	2003 track & dig site; 2003 sighting; 2007 track.	Yes	Tobacco

General Location in Relation to Recovery Zone	6 th Order HUC		Documented Grizzly Bear Use Details	Meets Selection Criteria to be Considered Occupied? Yes or No	BORZ
	Name	Number			
General area located west of Lake Koochanusca	Stillwater River-Hellroaring Creek				
	Indian Creek	170101010305	HUC is all PVT land outside of recovery area.	No	NA
	Tobacco River	170101010306	1979 sighting; 1998 sighting; 2003 radio collared adult female, 2005 radio collared adult female; Cut off portion of HUC NE of Hwy 93 due to Private land & isolated FS parcels	Yes	Tobacco
	Phillips Creek	170101010404	85-90% of HUC is PVT. Small portion of FS along reservoir/border in P-Pine habitat. FS portion in unroaded mgmt. 9/04 yearling grizzly bear killed on hwy near border.	No	NA
	Upper Pinkham Creek	170101010407	1987 dig site; 1990 female w/cubs; 1995 adult female capture; 1999 female w/cubs; 2003, 2004, 2005 radio collared female, plus additional sightings	Yes	Tobacco
	Lower Pinkham Creek	170101010408	2003 radio collared female; 2004 female w/cubs; 2005 radio collared female; 2006 sighting	Yes	
	Sutton Creek	170101010602	1995 female w/cubs; 2002 sighting; 2004-05 radio collared adult female	Yes	
	McGuire Creek	170101010603	1972-74 sightings; 2005 radio collared adult female; 2006 radio collared adult female	Yes	
	Tennile Creek	170101010606	1974 sighting; 2000 sighting; 2002 sighting; 2003 sighting; 2004-2005 radio collared adult female	Yes	
	Fivemile Creek	170101010701	1986 sighting of female w/cubs; 2003-2004 radio collared female 2003; linkage	Yes	NA
	Warland Creek	170101010703	No data	No	
	Cripple Horse Creek	170101010705	1969 & 1971 sightings; 2005 sighting	No	
	Canyon Creek	170101010707	No data	No	
	Weigel Creek	170101020301	2003 Sighting	No	
	Upper Wolf Creek	170101020302	No data	No	
	Dry Fork Creek	170101020303	2003 sighting; 2005 sighting	No	
Area south and west of Highway 2	Swamp Creek-Cowell Creek	170101010802	2 radio-collared sub-adult females (augmentation bears) 1994, 2006, 2008; 2006 sighting. No use east of Hwy 2—cut HUC off at highway due to lack of sightings and lack of habitat.	Yes	Cabinet Face
	Granite Creek	170101010802	2007 observation	No	
	Big Cherry Creek	170101010804	1981 sighting; 1991 radio-collared augmentation bears; 2002 sighting; 2005 sighting of bear crossing Hwy 2; 2007 sightings; 2007 video of 2 bears.	Yes	Cabinet Face
	Upper Libby Creek	170101010801	1975 sighting; 1995 sighting; 1999 sighting; radio collared sub-adult female 2005, radio collared sub-adult female 2008	Yes	
	Lower Libby Creek	170101010805	1997 mortality of male; 2005 sighting east of Highway 2; 2006 sighting. Area west of highway little info and not a linkage zone. Cut HUC off at highway due to lack of sightings and habitat.	Yes	
	Flower Creek	170101011001	1991 sub-adult female	No	NA
	Parmenter Creek	170101011002	No data	No	NA
	Middle	170101011005	Sighting in 1980's; 1990 augmentation female		NA

General Location in Relation to Recovery Zone	6 th Order HUC		Documented Grizzly Bear Use Details	Meets Selection Criteria to be Considered Occupied? Yes or No	BORZ
	Name	Number			
Area south and west of Highway 2	Kootenai River				
	Island Creek	170101020102	2001 sighting of an adult male and track	No	NA
	Pleasant Valley Creek	170101020103	No data	No	NA
	Pleasant Valley Fisher River-Pearsons Reservoir	170101020104	No data	No	NA
	Pleasant Valley Fisher River-Barnum Creek	170101020105	2006 relocated male captured on the Flathead	No	NA
	Elk Creek	170101020106	No data	No	NA
	McGinnis Creek	170101020107	2006 sub-adult male sighting—augmentation bear	No	NA
	Pleasant Valley Fisher River-Loon Lake	170101020108	No data	No	NA
	East Fisher Creek	170101020201	1983 sighting; 1985 sighting; 2008 sighting	No	NA
	Silver Butte Fisher River	170101020202	2007 sighting (most of HUC in RZ)	No	NA
	Little Wolf Creek	170101020304	No data	No	NA
	Middle Wolf Creek	170101020305	No data	No	NA
	Dunn Creek	170101010709	No data	No	NA
	Lower Wolf Creek	170101020306	1987 sighting; 2006 sighting	No	NA
	West Fisher Creek	170101020401	2006 sighting; radio telemetry location of two different augmentation females in 2010 along border of HUC.	Yes	Cabinet Face
	Upper Fisher River	170101020402	1986 sighting; 1992 sighting; 1996 sighting; 1997 female w/cubs; 2008 radio-collared sub-adult female; identified linkage zone. HUC cut off at Hwy. 2 due to lack of sightings and lack of habitat.	Yes	
	McKillop Creek	170101020403	No data	No	NA
	Cow Creek	170101020404	No data	No	NA
	Middle Fisher River	170101020405	No data	No	NA
	Lower Fisher River	170101020406	No data	No	NA
	McGregor Creek	170102130101	No data	No	NA
	Thompson Lakes	170102130102	No data	No	NA
	Lower	170101011207	Most of HUC is in RZ; 1990 sub-adult female	No	NA

General Location in Relation to Recovery Zone	6 th Order HUC		Documented Grizzly Bear Use Details	Meets Selection Criteria to be Considered Occupied? Yes or No	BORZ
	Name	Number			
	Kootenai River				
	Radio Creek	170102130401	Lolo-No data	No	NA
	Upper Fishtrap Creek	170102130402	Lolo	No	NA
	Upper Vermillion	170102130801	Lolo	No	NA
Area located to the southwest of Highway 200 and the recovery zone	Upper Big Beaver Creek	170102130701	1 peripheral sighting in 1995	No	NA
	Little Beaver Creek	170102130702	1979 sighting; 1993 peripheral sighting	No	NA
	White Pine Creek	170102130703	1984 and 1985 radio-collared adult male	No	NA
	Lower Big Beaver Creek	170102130704	1980 sighting; 1984 and 1985 radio-collared adult male; 1992 and 1993 sightings	No	NA
	Lower Vermillion River	170102130803	No data	No	NA
	Graves Creek	170102130901	No data	No	NA
	Noxon Reservoir-Squaw Creek	170102130902	No data	No	NA
	Deep Creek	170102130903	No sightings outside RZ	No	NA
	Noxon Reservoir-Mosquito Creek	170102130904	1979 sighting	No	NA
	Noxon Reservoir-Bear Creek	170102130905	No sightings outside RZ	No	NA
	Upper Trout Creek	170102131001	1984 and 1985 radio-collared adult male; 1984 sighting; 1995 sighting	No	NA
	Lower Trout Creek	170102131002	1984 and 1985 radio-collared adult male	No	NA
	Noxon Reservoir-Belgian Gulch	170102131003	No Data	No	NA
	Marten Creek	170102131004	1980 sighting; 1984 sighting; 1984 radio collared adult male; 1987 sighting; 1991 sighting; 2002 sighting; 2003 sub-adult male (cub) and 2003 sub-adult female (cub-later died)(cubs were moved there after death of sow)	Yes	NA
	Swamp Creek	170102131006	No data	No	NA
	Noxon Reservoir-Stevens Creek	170102131006	1984 and 1985 radio-collared adult male; 2008 sighting; potential linkage corridor	Yes	
	Pilgrim Creek	170102131302	1980 sighting on edge of HUC; 2009 sighting. Surrounded by other RUAs so added to BORZ.	Yes	

General Location in Relation to Recovery Zone	6 th Order HUC		Documented Grizzly Bear Use Details	Meets Selection Criteria to be Considered Occupied? Yes or No	BORZ
	Name	Number			
Area located to the southwest of Highway 200 and the recovery zone	Upper Cabinet Gorge Reservoir	170102131303	1985 radio-collared adult female, 2007 adult female w/cubs, 2008 sighting of female	Yes	Clark Fork
	East Fork Elk Creek	170102131304	2002 radio-collared sub-adult male; 2005 adult male. Linkage	Yes	
	Elk Creek	170102131305	1993 sighting; 2003 sighting; 2005 adult female w/cubs	Yes	
	Lower Cabinet Gorge Reservoir	170102131306	2001 adult female w/cubs-later died on RR tracks; 2002 tracks; 2003 three yearlings; 2008 radio-collared female	Yes	Clark Fork
	Clari Fork River-Cabinet Gorge Dam	17010213309	No data	No	NA
Area northwest of the recovery zone that is located north and east of Kootenai River	Mission Creek	170101040508	1990 radio-collared male; 1990 sighting; 1997 sighting; 1999 radio-collared female; 1999 tracks; 2000 sighting; 2005 capture site; 1 radio-collared sub-adult female in 2005; radio-collared sub-adult male in 2006; another radio-collared sub-adult male in 2006 and 2007	Yes	Mission-Moyie (formerly Deer Ridge)
	Round Prairie Creek	170101050303	2000 sighting; 2006 sighting; 2006 track, another 2006 track; 1 radio-collared sub-adult female in 2005; sub-adult male in 2006; another sub-adult male in 2006 and 2007	Yes	
	Moyie River above Feist Creek	170101050203	1986 sighting; radio-collared male in 1997; 1998 sighting of female w/cubs; radio collared female in 2000; sightings in 2004 and radio-collared male in 2004; radio-collared female in 2007; female with cubs in 2009	Yes	
	Moyie River above Placer Creek	170101050301	2 sub-adult males 2007; tracks of grizzly in 2001; and radio collared sub-adult male in 2004	Yes	
	Meadow Creek	170101050304	No data	No	NA
	Lower Moyie River	170101050306	No data	No	NA
	Deer Creek	170101050308	Most of this HUC is in the RZ; no other sightings at lower elevations outside of the RZ boundary	No	NA
	Curley Creek	170101040103	No data	No	NA
	Pine Creek	170101040102	No data	No	NA
	Kootenai River above Bonners Ferry	170101040304	No data	No	NA
	Kootenai River above Cow Cr	170101040303	No data	No	NA
	Kootenai R above Dobson Cr	170101040302	No data	No	NA
	Kootenai R above Sand Cr	170101040301	No data	No	NA
	Kootenai R abv Bonners	170101040101	No data	No	NA

General Location in Relation to Recovery Zone	6 th Order HUC		Documented Grizzly Bear Use Details	Meets Selection Criteria to be Considered Occupied? Yes or No	BORZ
	Name	Number			
Area northwest of the recovery zone that is located north and east of Kootenai River	Ferry				
	Brown Creek including Twentymile Creek	170101040406	No data	No	NA
	Deep Creek above Brown Creek	170101040402	No data	No	NA
	Rapid Lightning Creek	170102140506	Most of this HUC is in the RZ; no other sightings at lower elevations outside of the RZ boundary	No	NA
	Grouse Creek	170102140505	Most of this HUC is in the RZ; no other sightings at lower elevations outside of the RZ boundary	No	NA
	Lower Pack River	170102140504	Portions of this HUC is in the RZ; no other sightings at lower elevations outside of the RZ boundary.	No	NA
	Strong Creek	170102140401	Most of this HUC is in the RZ; no other sightings at lower elevations outside of the RZ boundary.	No	NA
	Lightning Cr below EF			No	NA
	Lightning Creek	170102131304	Most of this HUC is in the RZ; no other sightings at lower elevations outside of the RZ boundary.		
	Lower Clark Fork at mouth	170102131204	Portion of this HUC is in the RZ; no other sightings at lower elevations outside of the RZ boundary.	No	NA
	Lower Clark Fork below Cabinet Gorge			No	NA
		170102131201	Most of this HUC is in the RZ; no other sightings at lower elevations outside of the RZ boundary.		

SELKIRK Recovery Zone

Datasets Considered

- Forest Service IPNF sightings (1948-2008)
- IDF&G sightings (category 4²⁰ and 5²¹) for the last 10 years (1999-2009)²²
- IDF&G radio collared and VHF information (1999-2009)

Occupied 6th order HUCs (BORZ) surrounding the Selkirk Grizzly Bear Recovery Zone.

General Area in relation to Recovery Zone	6 th Order HUC		Documented Grizzly Bear Use Details	Meets Selection Criteria to be Considered Occupied? Yes or No	BORZ
	Name	Number			
Area to the west of Priest Lake and Priest River and south of Kalispell-Granite, LeClerc, and Lakeshore BMUs	Lower Granite	170102150303	2007 habituated sub-adult male	No	
	Reeder	170102150206	2007 two sub-adult males including a habituated bear	No	
	Kalispell	107102150208	2005 sighting; 2 sub-adult males including 1 habituated bear (2007), 2005 sighting	Yes*	Priest
	Reeder (Reynolds Cr)	170102150206	1997 sighting; 2007 two sub-adult males including habituated bear (turn on due to juxtaposition between Kalispell and Lamb Cr)	Yes*	
	Lamb Creek	170102150401	Female with cubs 1989; radio-collared female in 1989; sub-adult male in 2007; another sub-adult male in 2007	Yes*	
	Priest River below Outlet Bay including Binarch Creek	170102140402	2007 habituated sub-adult male	No	
	Upper W. Branch below Solo Creek	170102150502	2007 habituated sub-adult male, 2001 radio collared sub-adult male, close proximity to location where 2 sub-adult males caught and moved in 2001	Yes	Priest
	Upper W. Branch above Solo Creek	170102150501	1990 sighting; 2007 sub-adult male. Turned on in part because of juxtaposition to RZ boundary, and linkage between HUCs further to the south that have recurring use.	Yes	
	Goose Creek	170102150503	2001 two sub-adult males caught and moved, female likely in area. Turned on in part because of juxtaposition to RZ boundary, and linkage between HUCs further to the south that have recurring use.	Yes	
	Lower W. Branch above Flat Cr	170102150701	1986 sighting; 2001 sub-adult male; 2004 sighting; 2007 radio-collared sub-adult male.	Yes	
	Lower W. Branch below Flat Cr	170102150702	No data	No	
	Priest River above East River	170102150403	2007 habituated sub-adult male	No	
	Moore's Creek	170102150703	No data	No	
	Lower Pend Oreille River	170102150406	No data	No	
	Priest River below Big Creek	170102150405	No data	No	

²⁰ Reliable sighting with a relatively high level of confidence

²¹ Highly reliable sighting (e.g. trapping location or sighting by IDF&G personnel or experienced grizzly bear biologists)

²² Idaho Fish and Game data reviewed on site courtesy of W. Wakkinen. Data is not on file with the Idaho Panhandle NFs.

General Area in relation to Recovery Zone	6 th Order HUC		Documented Grizzly Bear Use Details	Meets Selection Criteria to be Considered Occupied? Yes or No	BORZ
	Name	Number			
	Big Creek	170102150404	2006 sighting	No	
	Priest Lake East Face (NFS)	170102150502	No data	No	
	Middle Fork East River	170102150601	No data	No	
	North Fork East River (NFS)	170102150603	No data	No	
	Lower Priest River	170102150406	No data	No	
Area located between the south eastern corner of the Recovery Zone and Highway 95	Pack River above Caribou Creek	170102140201	3 bears (radio collared)—sub-adult male 2001 & 2007 and adult male in 2001, plus sightings in 1996, 1998, 2000	Yes	Pack River
	Deep Creek above McArthur Lake outlet	170101040401	2006 sighting of female w/cubs; 2009 two sub-adult bears—one captured and relocated.	Yes	
	Pack River above Jeru Creek	170102140201	Radio-collared male 1986; sighting in 1999; radio-collared male in 2000; tracks in 2000; female with cubs 2000; female with cubs in 2005; tracks in 2009.	Yes	
	Fall Creek	170101040403	2007 sub-adult male; 2003 sub-adult female capture + other bears in vicinity; 2007 sow w/cubs; 2001 adult male; 2007 sighting	Yes	
	Soldier Creek (NFS lands)	170102150210	3 radio collared bears (sub-adult male 2007, sub-adult male 2001) and 2000	Yes	
	Pack River above Sand Creek	170102140503	2000 radio collared bear	No	
	Deep Cr below Brown Creek	170101040405	2001 adult male; 2007 radio collared sub-adult male	No	
	Snow Creek	170101040408	2007 subadult male	No	

*Areas east of Highway 57 within these RUAs have issues related to a higher level of private property and recreational residences where we do not want to manage for grizzly bear occupancy. Emphasis here is on education and sanitation.